User manual

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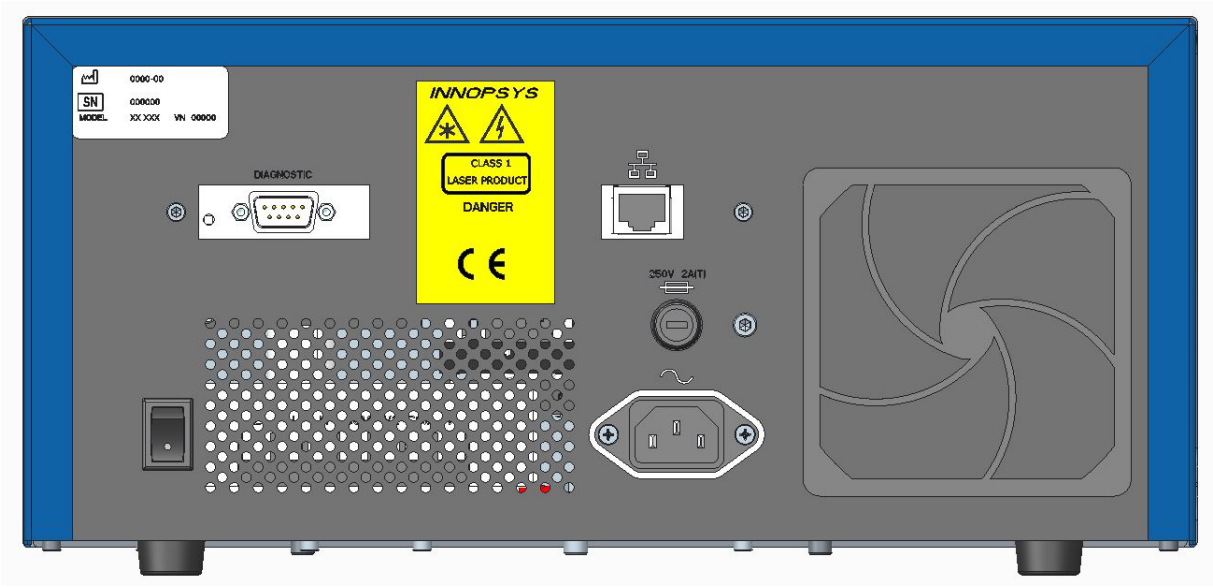
Identification and Certification Label

Two labels are affixed at the rear of the InnoScan as show on the picture below.

710 and 710-IR scanners



300-R and 300-G scanners

The following pieces of information are present:

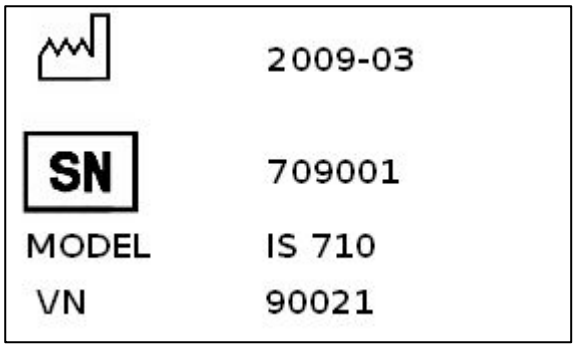
INNOPSYS
INNOPSYS - www.innopsys.fr
Parc d'activités Activestre, 31390 Carbonne FRANCE
Made in France
~ 100-240 VAC
1.2 A (230 VAC)
50 / 60 Hz
CLASS I
LASER PRODUCT
DANGER
Class 3B laser radiation when open.
AVOID DIRECT EXPOSURE TO BEAM.
This device complies with 21 CFR 1040.10 & 1040.11 & 21 CFR 1010

Attention laser radiation inside

Attention dangerous voltage inside

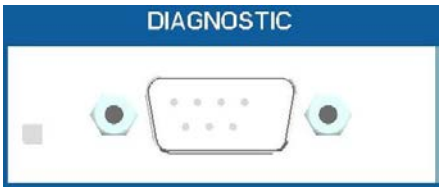
Attention read carefully instructions for use

Separate collection for the electrical and electronic equipment



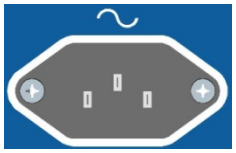
	Manufacturing date
SN	Serial number
MODEL	Scanner model (300-R, 300-G 710, 710-IR, 910, 1100 AL, with or without Autoloader system)
VN	Version number of the instrument

Pictograms are associated to each connector to explain its function:



RS232 port used for diagnostic issue

Ethernet RJ45 port



Alternating current

Current & rating of fuse to be replaced

Safety: important information

Only qualified personnel who knows and understands the safety warnings and precautions described in this document may be authorized to use the InnoScan scanner.

Use for any purpose other than the purpose indicated in this manual exposes the user to serious hazards.

Caution, use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

The following safety precautions are compulsory and must be stringently observed at all times.

Laser Safety

InnoScan 710, 710-IR, 910,1100 AL

These devices contain two laser sources. These laser sources are harmless when the equipment is used for its intended purpose. In all other cases, the laser sources may cause bodily injury.

- For 710 and 910 scanners, the technical specifications of the laser sources located in the machine are as follows:
  - source1: visible wavelength 635nm, continuous wave, maximum output 15mW, divergence <1mrad, Class IIIb
  - source2: visible wavelength 532nm, continuous wave, maximum output 15mW, divergence <1mrad, Class IIIb
- For 710-IR scanners, the technical specifications of the laser sources located in the machine are as follows:
  - source1: visible wavelength 670nm, continuous wave, maximum output 15mW, divergence <1mrad, Class IIIb
  - source2: non visible wavelength 785nm, continuous wave, maximum output 25mW, divergence <1mrad, Class IIIb

- For InnoScan 1100 AL scanners, the technical specifications of the laser sources located in the machine are as follows:
  - source1 : visible wavelength 635nm, continuous wave, maximum output 15mW, divergence <1mrad, Class IIIb
  - source2 : visible wavelength 532nm, continuous wave, maximum output 15mW, divergence <1mrad, Class IIIb
  - source3 : visible wavelength 488nm, continuous wave, maximum output 15mW, divergence <1mrad, Class IIIb

InnoScan 300-R and 300-G

These devices contain one laser source. This laser source is harmless when the equipment is used for its intended purpose. In all other cases, the laser source may cause bodily injury.

- For 300-R scanner, the laser source located in the machine has the following specifications : visible wavelength 635nm, continuous wave, maximum output 15mW, divergence <1mrad, Class IIIb

- For 300-G scanner, the laser source located in the machine has the following specifications : visible wavelength 532nm, continuous wave, maximum output 15mW, divergence <1mrad, Class IIIb

For all types of scanners, do not attempt to gain access to the interior of the device.

High voltage

Some electronic assemblies in the device require high voltages (>1000V) to operate normally. These sources are harmless when the equipment is used for its intended purpose. In all other cases, high voltage may cause severe or fatal bodily injury.

Do not attempt to gain access to the interior of the device.

Moving parts

Because the InnoScan is a scanner, it contains moving parts. These parts are harmless when the equipment is used for its intended purpose. In all other cases, these parts may cause bodily injury.

Do not attempt to gain access to the interior of the device.

Safety system

The InnoScan has been designed to reduce all the above risks to zero when the equipment is used for its intended purpose. In the case of Innoscan single

slide, the device housing and its mechanical shutter system protects you from all danger.

Never attempt to open the housing. No user-serviceable parts inside. The user must call Technical Support if the machine exhibits any failure or malfunction. The housing may only be opened by qualified personnel appointed by Innopsys.

With 710, 710-IR and 910 Innoscan single slide a protective shutter obstructing the slide insertion port closes when the slide is swallowed by the scanner. If this shutter remains in the closed position for any reason whatsoever, preventing you from inserting a slide or removing a previously inserted slide, do not attempt to force it open: call Technical Support immediately. Damage to this shutter may expose you to laser hazards.

With InnoScan equiped with AutoLoader system, the user has to close a sliding door after inserting slides in the autoloader system. This door will be automatically locked during a scan. Do not attempt to force it open during a scan. Damage to this sliding door may expose you to laser hazards. If for any reason the door is still locked after scanning or if you are able to open the door during a scan, immediately switch off the machine and contact Technical Support.

With 300-R and 300-G InnoScan, the user must close the door after inserting the slide. If the user opens the door during the reading, the laser source is switched off.

If a slide is broken inside the scanner or cannot be easily extracted, do not try and get it by force, do not attempt to open the housing but contact Technical Support.

If the scanner housing is damaged, do not use the equipment and contact Tecfnical Support.

For 710, 710-IR, 910 and 1100 AL , if any laser light is visible for any reason whatsoever, immediately switch off the machine and contact Technical Support.

For 300-R and 300-G scanner, if the laser remains switch on when the door is opened, immediately switch off the machine and contact Technical Support.

Warning, replace the fuse by a fuse of the same type

- 2AT, 250V,
- Type: 5*20 mm
- Breaking capacity: 150A

Instructions to replace the fuse:

- Disconnect power cable and switch off the scanner
- Turn a 5.5 mm plat screwdriver from right to left inside the fuse holder to remove it
- Replace the fuse and move back the fuse holder on the rear side of the scanner

- Turn the screwdriver from left to right inside the fuse holder to lock it

Use terms

The scanner is designed for use in research only.

It is not designed or certified for use in the diagnosis of human or animal diseases.

The InnoScan series

The range Innoscan includes nine different models:

- InnoScan710 has excitation lasers with wavelengths 635nm and 532nm. It is able to scan slides with a 3 µm pixel size
- InnoScan710-IR has excitation lasers with wavelengths 670nm and 785nm. It is able to scan slides with a 3 µm pixel size
- InnoScan910A has excitation lasers with wavelengths 635nm and 532nm. It is able to scan slides with a 1 µm pixel size
- InnoScan300-R, a scanner with wavelength 635nm. It is able to scan slides with a 10µm pixel size.
- InnoScan300-G, a scanner with wavelength 532nm. It is able to scan slides with a 10µm pixel size.
- InnoScan710AL is an InnoScan710 scanner associated with a 24 slides loader.
- InnoScan710-IR AL is an InnoScan710-IR scanner associated with a 24 slides loader.
- InnoScan910AL is an InnoScan910 scanner associated with a 24 slides loader as well.
- InnoScan 1100 AL with a 24 slides loader, has excitation lasers with wavelengths 635nm, 532nm and 488nm. It is able to scan slides with a 0.5µm pixel size.

Installing the scanner

List of packaged components

- scanner
- mains power cable
- ethernet crossover cable STP (*Shielded Twisted Pairs*)
- user manual
- software installation CD
- software user manual
- Innopsys check slide for 710, 710-IR, 910 and 1100 AL scanners

Electrical Communication Connection

Before you connect the scanner to your electrical communication, please ensure that :

- the wall socket is grounded,
- your electrical communication follows these specifications:
  - Power supply: 100-240 V / 47-63 Hz
  - Fuse: 4A at 110V / 2A at 220V
  - Electrical communication: circuit breaker able to switch at least in 40ms.

Without a grounded socket and/or if your electrical circuit does not comply with these specifications, the equipment should be damaged and the user's safety should not be ensured.

Installing the scanner

The scanner must be located on a base:

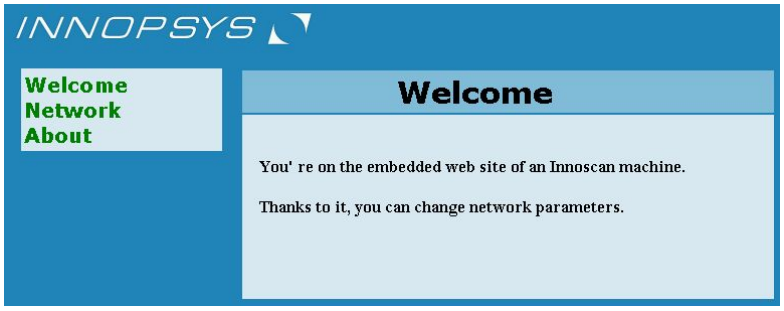
- not subject to strong vibrations (centrifuge, vortex, etc.)
- not exposed to direct sunlight
- that prevents the housing from coming into any contact with chemicals (especially acetone)
- Block scanner ventilation, allow 5 cm of space from the rear panel of the scanner
- Move the scanner while it is functioning. Remove any slide from inside of the scanner before moving it. If necessary, ask for colleague assistance to move the scanner
- Put the scanner on a table strong enough to bear the weight of the scanner

Connect the scanner to a grounded mains outlet (110V or 220V) by using the mains power cable supplied.

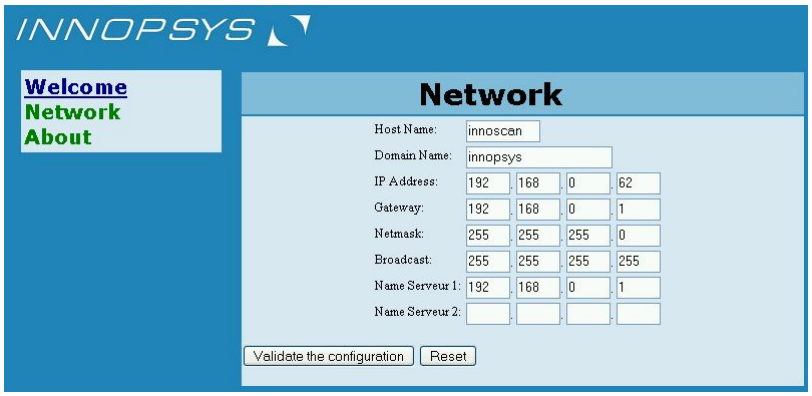
Connect the scanner to a dedicated PC via the crossover ethernet cable supplied, or to the network via a STP (*Shielded Twisted Pairs*) straight ethernet cable .

Change the IP address and the various network parameters of the scanner as required for your network (ask your network administrator for advice).

To do this, enter the scanner's default address (192.168.0.254) in your web browser's navigation bar. This will connect you to the machine's web server:



Click on Network: you may now edit the machine's network parameters:



To confirm your parameters, click on "Validate the configuration". Press "Reset" to cancel changes.

To configure the scanner as a DHCP client, type 0.0.0.0 as IP Address.

Scanner check after installing the scanner

InnoScan 710, 710-IR, 910 and 1100 AL

- Insert the delivered check slide

- Run Mapix software
- Click on the « check scanner » button in the « Scanner » menu

InnoScan 300-R and 300-G

For these scanners, the check slide is included in the scanner.

- Run Mapix software
- Click on the « check scanner » button in the « Scanner » menu

Mapix displays the checked points and if the scanner is functionnal. Otherwise, please contact your distributor.

Restoring factory settings

If for any reason, the IP address is badly configured or forgotten, you can restore the machine's factory IP settings by holding down the reset button as shown in the illustration below while the scanner is powered up.

Meaning of visual and audio signals

4 LED pictogrammes and a buzzer keep the user informed about the scanner's status at all times. See below for the meaning of pictogrammes:

	Meaning of icon
	power on
	connecting
	microarray read/present

	Meaning of icon
	technical problem

Information displayed:

status	***LED on***	***flashing slowly***	***flashing rapidly***	***beep***
scanner on				
powering up (switching on power)				
end of power-up sequence (scanner ready to connect)				short
connecting				
connection sequence completed (scanner ready to take a slide)				long
disconnecting				short
slide inserted (scanner ready to read)				
reading				
reading completed (slide ready for removal)				3 shorts
technical problem				

In the event of a technical problem, the scanner must be switched off and Technical Support contacted immediately.

Operating the scanner

Using the software

Please refer to the software user manual supplied with the device.

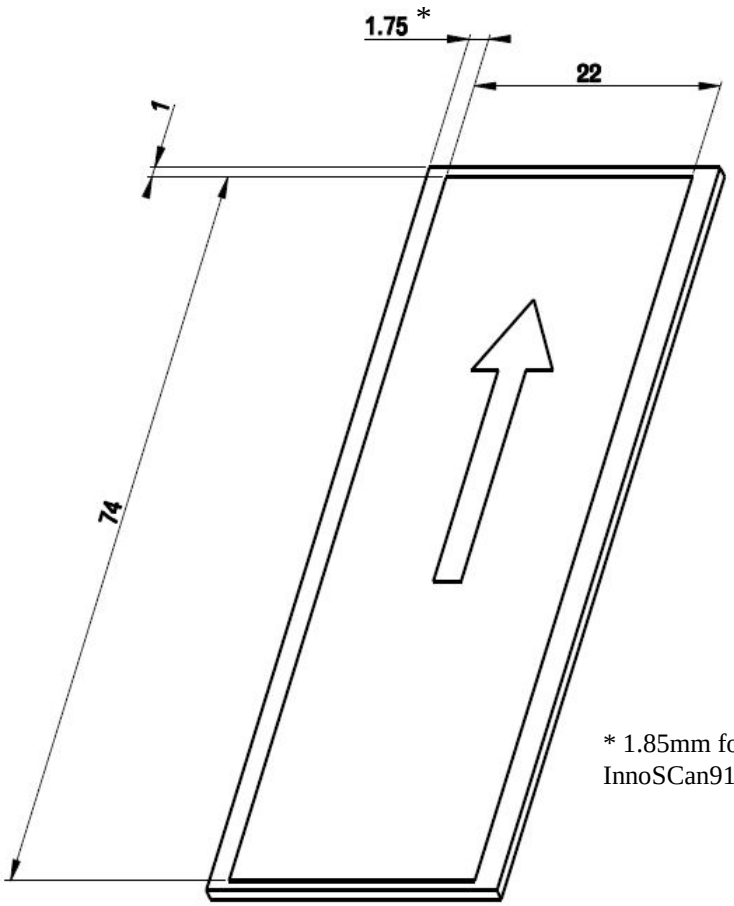
Microscope Slides

Only insert ISO 8037/1-compliant microscope slides into the device, to the exclusion of any other object. These slides are 25 to 26 mm wide, 75 to 76 mm long and 0,9 to 1,2 mm thick.

Make certain these slides are not damaged (chiped edges, for instance). Take care about labels sticked on slides. They have not to stick up from the slide or to come unstuck. These precautions are of the most importance when using an autoloader system in association with InnoScan. The edges of the slides should be reflective to be detected by the autoloader system.

Verify that there is no safety film on the slide or any other sticky material. The slide could not be removed from the scanner otherwise.

The scan area is shown below. The slide is inserted in the direction indicated by the arrow:



* 1.85mm for InnoScan910 or InnoSCan910AL

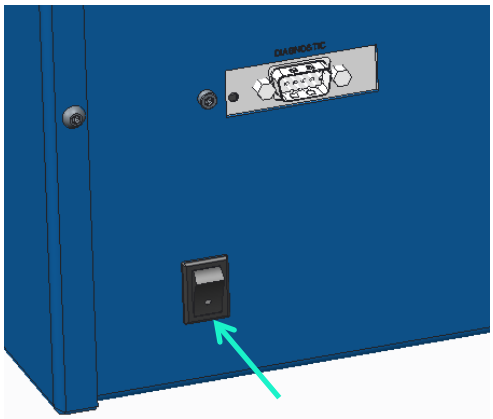
If spots are deposited outside the scan area, they could be damaged by the slide gripping system.

Operating the single slide scanner

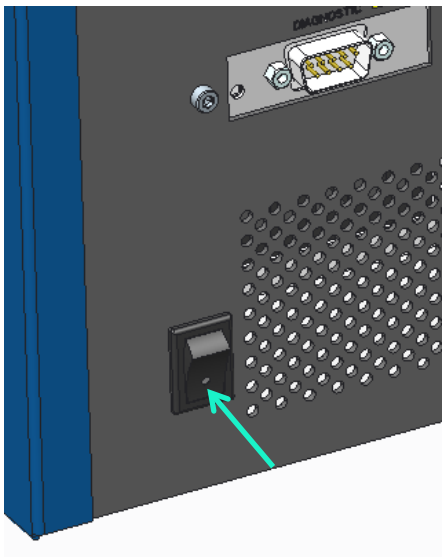
The scanner is easy to operate. The only direct user actions required (without using the software) are:

- powering up/switching off the scanner using the on/off button located on the instrument rear panel.

InnoScan 710



Scanner 910



Scanners 300-R et 300-G

When the scanner is powered up, it performs a sequence of self tests and will indicate any malfunction via the Technical Problem LED. The test sequence lasts for approximately 30 seconds. When the sequence has completed, a short beep is emitted. If the Technical Problem LED is off, the scanner is ready for use.

It is nevertheless advisable to wait 10 minutes after the scanner has **connected** (as opposed to **powered up**) before use, so that the lasers have time to achieve thermal stability.

- For 710, 710-IR and 910 scanners, placing a microscope slide in the insertion port located on the instrument front panel.

- For 300-R and 300-G scanners, open the front door and insert the slide. Close the door before starting the scan.

Scanners 300-R et 300-G

The barcode and microarray spots must be on the same face of the slide, i.e. upwards, as shown in the previous illustration.

Two rails guide the slide in by gripping it by the edges. The insertion mechanism is designed not to damage the slide or the array spots deposited on it.

Gently push the slide home. The microarray presence detector detects that a slide has been inserted and the microarray present LED comes on, indicating that the scanner is ready to read the sample.

Any other use of the scanner may be dangerous, or may harm the scanner. Do not attempt to loosen screws or insert any object other than slides complying with ISO standard 8037/1.

Operating the autoloader scanner

The scanner is easy to operate. The only direct user actions required (without using the software) are:

- powering up/switching off the scanner using the on/off button located on the instrument rear panel.

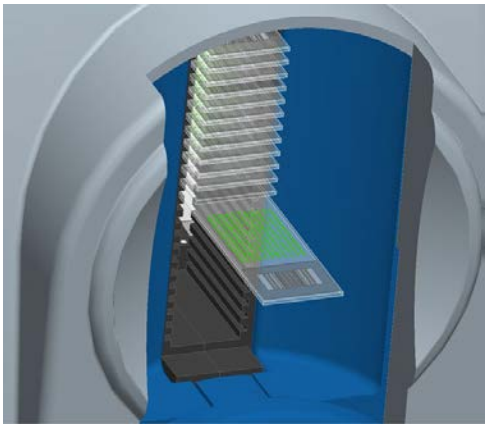
Scanner 710AL

Scanners Innoscan 910AL, InnoScan 1100 AL

When the scanner is powered up, it performs a sequence of self tests and will indicate any malfunction via the Technical Problem LED. The test sequence lasts for approximately 30 seconds. When the sequence has completed, a short beep is emitted. If the Technical Problem LED is off, the scanner is ready for use.

It is nevertheless advisable to wait 10 minutes after the scanner has **connected** (as opposed to **powered up**) before use, so that the lasers have time to achieve thermal stability.

- Slid down the door until full opening. Insert slides horizontally in the loader slots numbered from 1 to 24. Gently push them until they reach the stop.



The barcode and microarray spots must be on the same face of the slide, i.e. upwards, as shown in the previous illustration.

Gently slide up the door to close the autoloader system.

The microarray presence detector detects that a slide has been inserted and the microarray present LED comes on, indicating that the scanner is ready to read the sample.

During a scan the door is locked. Do not attempt to force it open, you may harm the scanner.

Wait for the end of the scans – see chapter «Meaning of visual and audio signals » before sliding down the door and getting back the slides.

Any other use of the scanner may be dangerous, or may harm the scanner.

	Do not attempt to loosen screws or insert any object other than slides. Be sure that inserted slides complied with ISO standard 8037/1(see chapter Microscope Slides) Be sure that inserted slides are pushed until the end stop Be sure that inserted slides are horizontal and not inserted on two different levels.

Scanner self-tests and checks

The scanner runs three levels of self-tests and checks.

Initialization checks

When the scanner is powered up, the LEDs light up as indicated in the chapter **Meaning of visual and audio signals**. Moving parts, detectors, laser power and the Ethernet port are all checked. If an error is detected, three long beeps sound and the red LED indicating a technical problem lights up. If this happens, switch off the scanner immediately and contact Technical Support.

Scan checks

During slide scanning, laser power and the autofocus are checked constantly. The scanner will report if either of these servo-controls did not function correctly, as this can produce errors. If such errors keep recurring, refer to the **Troubleshooting** chapter.

Innopsys with slide check

You can also check the scanner more precisely if you so wish.

710, 710-IR, 910 and 1100 AL scanners

Insert the Innopsys slide provided with your scanner and run a check from the Scanner->Check scanner menu in Mapix.

The fluorescence signal, image red/green shift (710, 910), image red/infrared shift (with 710-IR) or image red/green shift – red/blue shift (with 1100 AL) and detection gain linearity are all checked. For 710, crosstalk is also checked. The fluorescence signal and image shift are compared to a reference value and to values obtained when the last check was run. A data integrity check is also performed.

The scanner indicates any malfunction detected. In this case, contact Technical Support.

The slide supplied with your scanner is valid for one year. The software will no longer allow you to run checks with it beyond this date and you must procure a new one.

The slide must be stored in its box at room temperature and away from light when not being used. You are advised to check the scanner once a month or each time you move it.

Only use this slide with the scanner it was delivered with.

300-R and 300-G scanners

For these scanners, the check slide is already included in the scanner. The user runs a check directly from the Scanner->Check scanner menu in Mapix.

The fluorescence signal and detection gain linearity are checked. The fluorescence signal is compared to a reference value and to values obtained when the last check was run. A data integrity check is also performed.

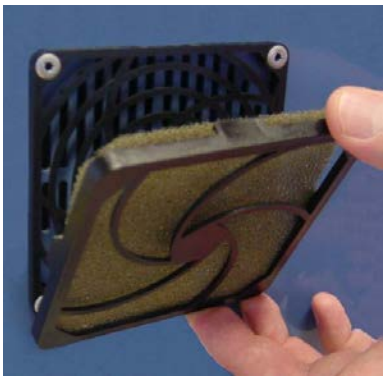
The scanner indicates any malfunction detected. In this case, contact Technical Support.

The slide included in the scanner is valid for 3 years. Beyond this date, the slide has to be changed.

Maintenance and Service

Fan filter replacement:

For models equipped with a fan filter, it is necessary to replace the filter by a new one every year. In the event of failure to meet the deadline for replacement of the filter, the scanner warranty deed should be revoked. Customer has to order a new filter to its distributor.



To replace the filter (see picture), remove the protection grid which is interlocked at the back of the scanner, remove the old filter, place the new filter and then interlock the protection grid by pressing each side.

No other user maintenance is required.

No other user service is allowed.

If a problem occured, please contact your distributor.

Troubleshooting

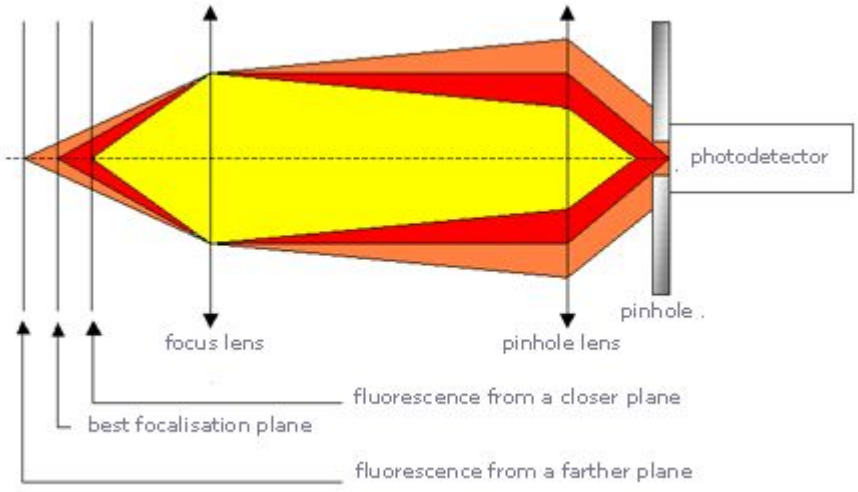
Sympton	Diagnosis
The image is dark or the measured signal is weak	• Make sure the detector gain is not too low (set to 100% to check) • If laser power is adjustable, make sure the laser power settings are not too low (set to high to check) • Make sure the slide fluorescence marking is compatible with InnoScan (see list of supported fluorophores in FAQ: Technical Data) • Check the scanner ~~using the Innopsys-supplied slide~~ (see Scanner self-tests and checks)
For scanners 710, 710-IR and 910 and 1100 AL: the image is striped or Mapix displays a « Focus was not stable during the scan » message	• The autofocus may not work properly with certain types of slide. It needs a clean reflective surface. A large bar code may cause problems. You can set the bar code height in Mapix (see your Mapix manual). • Certain types of slide (e.g. with black edges) may also cause problems. You can select the slide type in Mapix (see your Mapix manual). • Thick spots deposited around the edges of the scan area may also confuse the autofocus system. • Contact Technical Support to try to resolve the problem. Otherwise, you can deactivate the autofocus.
The image is distorted and shapes are the wrong size	• See previous problem in the case of 710, 710-IR, 910 and 1100 AL scanners. • Check if the same problem occurs with all types of slides. • Check that the problem isn't being caused by the direction in which the slide is inserted by turning it around 180° and then reinserting it. If the defects are also rotated 180°, the slide is causing the problem. Otherwise, contact Customer Support.
There is a spot in the same place on all images, whatever slide you use.	• Contact Customer Support. • Avoid using slides with liquids likely to run during scanning.

FAQ: Technical data

What is the basic operating principle of the InnoScan?

The InnoScan is a **confocal fluorescence scanner**. For 710, 710-IR and 910 scanners, the imaging system consists of two laser sources to excite the chemifluorescent dyes (635nm and 532nm for InnoScan 710 and 910, 670nm and 785nm for InnoScan-IR), two detection photomultipliers. For InnoScan 1100 AL scanners, the imaging system consists of three laser sources (635nm, 532nm and 488nm) and three detection photomultipliers. A very high-precision optical filters provide results with enhanced signal-to-noise ratios. 300-R and 300-G scanners consist of one laser source (635nm for 300-R and 532 for 300-G) and one detection photomultiplier.

Confocal means that fluorescence emitted from planes other than the plane on which the scanner's optical system is focussed is not measured, thus cancelling out all parasite fluorescence.



For 710, 710-IR, 910 and 1100 AL scanners, the InnoScan's autofocus system achieves excellent measurement reproducibility, irrespective of microscope slide quality (plastic slides, which are not perfectly flat, can be used). 300-R and 300-G do not have autofocus (fixed focalization) but the large depth of field of these systems enables them to compensate imperfect flatness of the slides.

The XY drive system provides very high sample throughput and makes the InnoScan the fastest scanner on the market (up to 35 lines a second) while maintaining accurate positioning of the read head thanks to a real-time control system.

What types of chemifluorescent dyes can be used?

For InnoScan 710 and 910, CY3, CY5, Alexa 647, Alexa 660, Alexa 546, and Alexa 555 dyes can be used.

For InnoScan 710-IR, AlexaFluor 700, AlexaFluor 680, Dylight 680, IRDye 680, IRDye700, Dy-680, AlexaFluor 790, Dy-780, IRDye 800, Dylight 800 dyes can be used.

For Innoscan 1100 AL, Cy2, CY3, CY5, Alexa 647, Alexa 660, Alexa 546, Alexa 555, Alexa 488, FITC, Sytox orange, Draq5 dyes can be used.

For InnoScan 300-R, CY5, Alexa 647 and Alexa 660 can be used.

For InnoScan 300-G, CY3, Alexa 546 and Alexa 555 can be used.

What are the wavelengths of the laser sources?

For InnoScan 710, 710-IR and 910, two laser sources are used.

For InnoScan 710 and 910, one is a wavelength of 635nm for CY5-type chemifluorescent dyes, and the second is a wavelength of 532nm for CY3-type chemifluorescent dyes.

For InnoScan 710-IR, one is a wavelength of 670nm for AlexaFluor700-type chemifluorescent dyes, and the second is a wavelength of 785nm for AlexaFluor790-type chemifluorescent dyes.

For InnoScan 1100 AL, three laser sources are used. One is a wavelength of 635nm for CY5-type chemifluorescent dyes, the second is a wavelength of 532nm for CY3-type chemifluorescent dyes and the third is a wavelength of 488nm for CY2-type.

For InnoScan 300-R and 300-G, one laser source is used. For InnoScan 300-R, the wavelength used is 635nm for CY5-type chemifluorescent dyes. For InnoScan 300-G, the wavelength used is 532nm for CY3-type chemifluorescent dyes.

How stable are the laser sources?

The laser sources are temperature and current-controlled to provide an extremely stable power output. Power fluctuation does not exceed 2% of power output.

How long does it take for the laser sources to become stable?

To achieve the most accurate results, you are advised to wait 10 minutes after the scanner has connected. The lasers will have reached their stable nominal operating temperature by then.

Can I adjust laser power?

Yes for InnoScan 710, 710-IR, 910, 1100 AL and 300-G, the lasers power can be set at two different levels (high and low). Low power is useful to decrease the bleaching of the fluorophores and to increase the lifetime of lasers. High power is used to obtain the best sensitivity results when it is a critical point.

InnoScan 300-R has only one laser power, the intensity could be adjustable with the gain.

When are the lasers on and off?

The lasers are on when the scanner connects and are off when it disconnects. To economize the lifetime of the lasers, it is advisable to disconnect the scanner when it is not being used for long periods of time.

How long does a read operation last?

A read with the following parameters lasts 4 minutes:

- pixel size: 10µm
- speed: 35 lines/s

- read area: full slide

Can I adjust the scanning speed?

Yes, scan speed is adjustable from 10 lines/s to 35lines/s

What happens when I change the scanning speed?

Reducing scanning speed provides a better signal-to-noise ratio, which can be useful in applications characterised by low fluorescence.

Can I adjust pixel size?

Yes, pixel size can be adjusted from 10 to 40µm with InnoScan 300-R and InnoScan 300-G, from 3 to 40µm with InnoScan710 and InnoScan710-IR, from 1 to 40µm with InnoScan910 and from 0.5 to 40µm with InnoScan 1100 AL. The memory size of a full slide image acquired at a pixel size of 5µm saved to a tiff file is approximately 256Mb.

What happens when I change pixel size?

If you reduce pixel size, you obtain better resolution but a larger image file and you have to ascertain whether the PC is capable of handling files this big. For instance, a full slide image at a pixel size of 5µm requires at least 2Gb of RAM.

What detection method is used?

We use photomultipliers because it provides results with better signal-to-noise ratios thanks to very low background noise and high sensitivity.

Can I adjust detection gain?

Yes, detection gain may be modified from 0% to 100%. The gain variation is linear allowing the user to adjust this setting very precisely. It may be useful to cancel out saturation or to equalize channels for instance.

What is the accuracy of the mechanical positioning system?

The scanner features a high-precision mechanical positioning system based on a patented real-time control loop. Absolute positioning is typically 30µm over the entire slide with InnoScan300-R and 300-G, 10 µm with InnoScan710 and InnoScan710-IR and 4µm on a 22mmx22mm scanned area on InnoScan910 and InnoScan 1100 AL.

The scanner is capable of reading all these symbologies:

- codabar
- code39
- Interleaved 2 of 5
- code93
- code 2 of 5
- iata code 2 of 5
- matrix 2 of 5
- code11
- code128
- telepen
- upcA-E0-E1
- eanJAN13/JAN8/UCC
- msi
- plessey
- rss-14/limited/expanded
- china post code
- pdf417

Embedded firmware

Source code of parts of the InnoScan embedded firmware

This is the description for the source code of the parts of InnoScan firmware that fall under open source licenses GNU GPL v2.0. Parts of the firmware under GNU GPL v2.0 license are made available on demand at contact@innopsys.fr.

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Every software listed below is under GNU GPL V2.0 open source license which is available at the following address:

http://www.gnu.org/licenses/gpl-2.0.html

- u-boot 1.2.0 and modifications

This software is used to initialise and to launch the system

- noyau linux DENX-ELDK based on kernel 2.4.25 and modifications

This software is the kernel of the linux embedded operating system

- busybox 1.2.1

This software provides a fairly complete environment for any small or embedded system

- boa 0.94.14-0.5.rc21

This software is a http server

- eraseall 0.1.0

This software is used to erase flash memory

Specifications

InnoScan 710A InnoScan 710AL InnoScan 910A InnoScan 910AL Specifications	**Description**
Excitation wavelengths	635 nm and 532 nm
Compatible dyes	Cy5, Alexa 647, Alexa 660 (635 nm) Cy3, Alexa 546, Alexa 555 (532 nm)

InnoScan 1100 AL Specifications	**Description**
Excitation wavelengths	635 nm, 532 nm et 488nm
Compatible dyes	Cy5, Alexa 647, Alexa 660, Draq5 (635 nm) Cy3, Alexa 546, Alexa 555, Sytox orange (532 nm) Cy2, Alexa 488, FITC (488nm)

InnoScan 300-R Specifications	**Description**
Excitation wavelength	635 nm
Compatible dyes	Cy5, Alexa 647, Alexa 660 (635 nm)

InnoScan 300-G Specifications	**Description**
Excitation wavelength	532 nm
Compatible dyes	Cy3, Alexa 546, Alexa 555 (532 nm)

InnoScan 710-IR InnoScan 710-IR AL Specifications	**Description**
Excitation wavelengths	670 nm and 785 nm
Compatible dyes	AlexaFluor 700, AlexaFluor 680, Dylight 680, Dy-680, IRDye680, IRDye 700 (670nm) Alexa 790, Dye-780, IRDye 800, Dylight 800 (785nm)

InnoScan 710A InnoScan 710AL InnoScan 710-IR	**Description**

InnoScan 710-IR AL InnoScan 300-R InnoScan 300-G Specifications	
Laser Power	Adjustable (2 laser powers available excepted for 300-R which has a fixed laser power)
PMT Gain	Adjustable from 0 to 100%
Autofocus	Real time autofocus
Detection	Real confocal and high performances PMT
Dynamique Range	Over than 10^4
Uniformity	Lower than 5% CV
Sample	All standard microscope slide Width: 25-26 mm Length: 75-76 mm Thickness: 0,9-1,2 mm
Max. Scanning Area	22 x 74 mm
Scan Speed	Adjustable from 10 to 35 lines/second
Scanning Time	3,5 minutes with a scan area of 22x74mm with a 10µm pixel size for a 1 or 2 color simultaneous acquisition.
Barcode	Codabar, code39, Iinterleaved 2 of 5, code93, code 2 of 5, iata code 2 of 5, matrix 2 of 5, code11, code128, telepen, upcA-E0-E1, eanJAN13/JAN8/UCC, msi, plessey, rss-14/limited/expanded, china post code, pdf417
Interface	Ethernet
Operating condition	Temperature : From 19 °C to 26°C Humidity : 20 – 95% HR Altitude : 0 - 2300 m

InnoScan 910 InnoScan 910AL Innoscan 1100 AL Specifications	**Description**
Laser Power	Adjustable (2 laser powers available)
PMT Gain	Adjustable from 0 to 100%
Autofocus	Real time autofocus
Detection	Real confocal and high performances PMT
Dynamique Range	Over than 10^4
Uniformity	Lower than 5% CV

Sample	All standard microscope slide Width: 25-26 mm Length: 75-76 mm Thickness: 0,9-1,2 mm
Max. Scanning Area	22 x 74 mm
Scan Speed	Adjustable from 20 to 35 lines/second (max 25 lines/second with a 0.5µm pixel size)
Scanning Time	3,5 minutes with a scan area of 22x74mm with a 10µm pixel size for a 1, 2 or 3 color simultaneous acquisition.
Barcode	Codabar, code39, Iinterleaved 2 of 5, code93, code 2 of 5, iata code 2 of 5, matrix 2 of 5, code11, code128, telepen, upcA-E0-E1, eanJAN13/JAN8/UCC, msi, plessey, rss-14/limited/expanded, china post code, pdf417
Interface	Ethernet
Operating condition	Temperature : From 19 °C to 26°C Humidity : 20 – 95% HR Altitude : 0 - 2300 m

InnoScan 710A InnoScan 710AL InnoScan 710-IR InnoScan 710-IR AL Specifications	**Description**
Optical resolution	2.7 µm (635 nm – spot diameter FWHM) 3 µm (670nm – spot diameter FWHM)
Pixel Resolution	From 3 to 40 µm

InnoScan 910 InnoScan 910AL Specifications	**Description**
Optical resolution	< 0.6µm (635-532 nm – spot diameter FWHM)
Pixel Resolution	From 1 to 40 µm

Spécifications InnoScan 1100 AL	**Description**
Optical resolution	< 0.6µm (635-532-488 nm – spot diameter FWHM))
Pixel Resolution	From 0.5 to 40 µm

InnoScan 300-R InnoScan 300-G Specifications	**Description**

Optical resolution	10 µm (532nm – spot diameter FWHM)
Pixel Resolution	From 10 to 40 µm

InnoScan 710A InnoScan 710-IR Specifications	**Description**
Size	278 x 457 x 369 mm (L x P x H)
Weight	15,5 Kg
Electric consumption	

100-240 V	220 V	110 V
Initialization	41 W	30 W
Stand by	30 W	20 W
Connected	32 W	24 W
Barcode reading	35 W	26 W
Scan	33 W	25 W

InnoScan 910 Specifications	**Description**
Size	316 x 549 x 432 mm (L x P x H)
Weight	28 Kg
Electric consumption	

100-240 V	220 V (230 V)	110 V (124 V)
Initialisation	42 W	42 W
En attente	43 W	37 W
Connecté	36 W	38 W
Lecture CAB	39 W	38 W
Lecture lame	39 W	40 W

InnoScan 710AL InnoScan 710-IR AL Specifications	**Description**
Size	333 x 595 x 422 mm (L x P x H)
Weight	27Kg
Electric consumption	

100-240 V	220 V	110 V
Initialization	37 W	20 W
Stand by	40 W	31 W
Connected	35 W	27 W
Barcode reading	35 W	26 W
Scan	33 W	25 W

InnoScan 910AL Specifications	**Description**
Size	322 x 656 x 439 mm (L x P x H)
Weight	33Kg
Electric consumption	

100-240 V	220 V (230V)	110 V (124V)
Initialization	45 W	45 W
Stand by	40 W	40 W
Connected	41 W	41 W
Barcode reading	44 W	44 W
Scan	45 W	45 W

InnoScan 1100 AL Specifications	**Description**
Size	322 x 656 x 439 mm (L x P x H)
Weight	35Kg
Electric consumption	

100-240 V	220 V (230V)	110 V (124V)
Initialization	46 W	45 W
Stand by	43 W	41 W
Connected	45 W	45 W
Barcode reading	47 W	45 W
Scan	48 W	47 W

InnoScan 300-R InnoScan 300-G Specifications	**Description**
Dimensions	344 x 426 x 163 mm (L x P x H)
Poids	11Kg
Puissance	

100-240 V	220 V (230 V)	110 V (124 V)
Initialisation	30 W	29 W
En attente	20 W	18 W
Connecté	21 W	20 W
Lecture CAB	25 W	25 W
Lecture lame	25 W	24 W

Declaration of conformity

INNOPSYS

DECLARATION DE CONFORMITE
Declaration of Conformity

Nous, INNOPSYS
We, Parc Activestre 31390 CARBONNE
France

Déclarons que les produits,
Declare that the products

Scanners de fluorescence de biopuces
MicroArray Scanners

Modèle :	INNOSCAN 710	INNOSCAN 910	INNOSCAN 710-IR
Range	INNOSCAN 710 AL	INNOSCAN 910 AL	INNOSCAN 710-IR AL
	INNOSCAN 1100 AL	INNOSCAN 300 G	

Satisfont aux exigences des directives :
Satisfy the requirements of the directives

Machine : **N° 2006/42/CEE**
Machinery

Equipement basse tension : **N° 2006/95/CEE**
Low voltage equipment

Compatibilité électromagnétique : **N° 2004/108/CEE**
Electromagnetic compatibility

Déchets d'équipement électrique et électronique : **N° 2002/96/CEE**
Waste Electrical and electronic equipment

Restriction des substances dangereuses : **N° 2011/65/CEE**
RoHS

Et sont conformes aux normes* :
And are compliant with the standards

- Compatibilité électromagnétique : *Electromagnetic compatibility*	NF EN 61326-1
- Sécurité électrique : *Electrical safety*	NF EN 61010-1 NF EN 61010-2-081
- Sécurité laser : *Laser safety*	NF EN 60825-1

* Normes aux versions en vigueur lors de la fabrication des scanners
Current version standards at the time of scanners manufacturing

Sous réserve d'installation et d'utilisation conformes aux instructions constructeur
Subject to installation and use conforming to the manufacturer's instructions

Année d'apposition du marquage CE : 09
Year of CE marking

Lieu et date d'émission
Place and date of issue

Carbonne (France), 02/07/2014

Stéphane Lebrun
PDG
CEO

Céline Hardy
Qualité & Affaires réglementaires
Responsable du Dossier technique
Quality and Regulatory Affairs
Technical file Manager

Ref : Déclaration conformité Rev : 05 1 / 1

Technical support

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	Function	Signature
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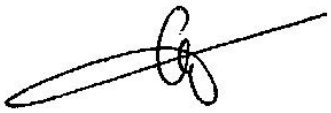
Approved by :	Quality manager	 Celine Hardy cn=Celine Hardy, o=Innopsys, ou=Responsable Qualite et affaires reglementaires, email=c-hardy@innopsys.fr, c=FR 2014.07.03 17:15:13 +02'00'

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